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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/589,401

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Uwe Skultety-Betz

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26646 7590 02/25/2009  
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EXAMINER

BYTHROW, PETER M

ART UNIT

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/589,401	<b>Applicant(s)</b> SKULTETY-BETZ ET AL.	
	<b>Examiner</b> Peter M. Bythrow	<b>Art Unit</b> 3662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02/02/2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) 1-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 18-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Information Disclosure Statement*

1. The information disclosure statements filed 02/03/2009 have been entered and considered. Initialed copies of the PTO-1449 by the Examiner are attached.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. **Claims 18 and 28** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The limitation of "wherein a displacement sensor detects signal characteristics of the sensors" is new matter. The relevant portion of the specification, page 5 lines 15-21 and page 10 lines 21-27, recites:

*"If the device has a distance sensor system, it is possible not only to measure the instantaneous signal levels of the different sensors, but also to detect and display signal curves. This makes possible a two-dimensional representation in the display of the instrument, which shows not only the distance information but also the depth information. This advantageously differs from the metal location-determining devices of the related art, in which the instantaneous measurement*

*result at the measurement site is usually displayed via one or more optical signal lights”.*

This passage indicates that a “distance sensor system” is detecting instantaneous positioning information of the hand held radar device, and using said positioning information to generate a two-dimensional display of distance and depth information regarding an object enclosed in a medium. However, the passage does not disclose “detecting signal characteristics of the sensors”, which implies collecting signal information from the sensors other than mere positioning information.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 18-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wollny (US 5680048) in view of Doerksen (“Improved Optical Positioning for GPR Based Structure Mapping”, Ninth International Conference on Ground Penetrating Radar, Proceedings of SPIE Vol. 4758 (2002), pp. 503-507) .

**As to Claims 18 and 28**, Wollny discloses a radar device having a radar sensor that generates a first detection signal for penetrating a medium to be tested in such a way that information about an object enclosed in the medium can be obtained by measuring and analyzing a reflected detection signal of the radar sensor (column 1 lines

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43-47), and an additional sensor for generating a second detection signal for obtaining information about the object enclosed in the medium (column 1 lines 65-67 and column 2 lines 1-3). Wollny does not disclose a displacement sensor detecting signal characteristics of the sensors.

Doerksen discloses a hand held Ground Penetrating Radar device (abstract) having a displacement sensor for determining the two-dimensional position of the GPR device as it is moved (page 503 column 2 first full paragraph). The use of positioning systems in GPR devices for determining the two-dimensional location of the GPR device is well known in the art. It would have been obvious to modify Wollny, such that the radar device incorporated a displacement sensor, as taught by Doerksen, in order to precisely determine the location of the radar device and objects of interest enclosed in the medium.

**As to Claim 19**, Wollny discloses the radar device being a hand held short range radar for determining a location of the object enclosed in the medium (column 3 lines 26-27 and column 2 lines 48-57).

**As to Claim 20**, Wollny discloses the additional sensor being an inductive sensor (column 2 lines 22-25).

**As to Claims 21, 22, 30, and 31**, capacitive sensors for detecting objects enclosed in a medium are well known in the art. It would have been obvious to modify Wollny in view of Doerksen, such that the additional sensor was a capacitive sensor, as it would cause no new or unexpected results.

**As to Claims 23 and 24**, infrared sensors for detecting objects enclosed in a medium are well known in the art. It would have been obvious to modify Wollny in view of Doerksen, such that the additional sensor was an infrared sensor, as it would cause no new or unexpected results.

**As to Claim 25**, Wollny discloses a housing in to which the radar sensor and the additional sensor are integrated (column 2 lines 1-3).

**As to Claim 26**, Wollny discloses the radiating elements being situated on a printed circuit board, but does not explicitly disclose the radar sensors and the additional sensor being both situated on the printed circuit board. However, manufacture of sensor components on printed circuit boards is well known within the art. It would have been obvious to modify Wollny in view of Doerksen such that both the radar sensor and the additional sensor were situated on the same printed circuit board as it would cause no new or unexpected results.

**As to Claim 27**, Wollny discloses the radar sensor being advantageously implemented over a multitude of frequency bands (column 5 lines 29-40). Though Wollny in view of Doerksen does not explicitly disclose the radar sensor being of the wideband pulse variety, wide band pulse radar sensors are well known in the art. It would have been obvious to modify Wollny in view of Doerksen such that the radar sensor was a wide band pulse radar sensor as it would cause no new or unexpected results.

**As to Claim 29**, Wollny discloses receiving reflected radar signals for analysis (column 2 lines 49-57). It is inherent in the operation of this type of radar system that

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objects be detected by transmitting a radar signal and carrying out analysis on the reflected radar signal in order to measure an object.

**As to Claim 32**, Wollny discloses the additional sensor being an inductive sensor and generating an additional detection signal (column 2 lines 22-25).

**As to Claim 33-35**, Wollny in view of Doerksen does not explicitly disclose the time operating parameters for measurement of the first detection signal and the second detection signal. However, time operating parameters for measurement of signals simultaneously, quasi-simultaneously, and sequentially are well known, and would be obvious to try, as they would cause no new or unexpected results

**As to Claim 36**, Wollny discloses measuring and analyzing a plurality of detection signals (column 1 lines 65-67 and column 2 line 1), the sensors originating from a group of sensors including an inductive sensor (column 2 lines 22-25).

**As to Claim 37**, Wollny discloses the detection signal of a sensor being optimized by measuring and analyzing an additional detection signal (column 3 lines 33-36).

### ***Response to Arguments***

6. Applicant's arguments with respect to claims 18-37 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter M. Bythrow whose telephone number is (571)270-1468. The examiner can normally be reached on Mon-Fri, 8AM-5:30PM, Alt Fri, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas H. Tarcza can be reached on 571-272-6979. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Peter M. Bythrow  
Examiner, Art Unit 3662

/Thomas H. Tarcza/  
Supervisory Patent Examiner, Art Unit 3662